

FORM PTO-1390  
(REV. 10-2003)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. 371

644P002

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

10/510265

INTERNATIONAL APPLICATION NO.  
PCT/KR03/01252INTERNATIONAL FILING DATE  
26 June 2003PRIORITY DATE CLAIMED  
5 March 2003TITLE OF INVENTION METHOD FOR CONTINUOUS PREPARATION OF NANOMETER-SIZED  
HYDROUS ZIRCONIA SOL USING MICROWAVEAPPLICANT(S) FOR DO/EO/US Hee Young Kim, Yong Ki Park, Kyung Koo Yoon and  
Hyung Sup Lim

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.
4. ☒ The US has been elected (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
  - a. ☐ is attached hereto (required only if not communicated by the International Bureau).
  - b. ☒ has been communicated by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
  - a. ☒ is attached hereto.
  - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
  - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
  - b. ☐ have been communicated by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☒ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371 (c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

## Items 11 to 20 below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A preliminary amendment.
14. ☐ An Application Data Sheet under 37 CFR 1.76.
15. ☐ A substitute specification.
16. ☒ A power of attorney and/or change of address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 37 CFR 1.821 - 1.825.
18. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
20. ☒ Other items or information:
  1. Copy of the International Search Report; and
  2. Copy of Form PCT/IB/304; and
  3. PCT Request (6-Pages).

BEST AVAILABLE COPY

U.S. APPLICATION NO. <b>10/510265</b>		INTERNATIONAL APPLICATION NO. <b>PCT/KR03/01252</b>		ATTORNEY'S DOCKET NUMBER <b>644P002</b>	
---------------------------------------	--	---	--	--	--

21. <input checked="" type="checkbox"/> The following fees are submitted: <b>BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):</b> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO ..... <b>\$1,110.00</b>  International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO ..... <b>\$ 950.00</b>  International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... <b>\$ 790.00</b>  International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... <b>\$ 750.00</b>  International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) ..... <b>\$ 100.00</b>  <b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>				<b>CALCULATIONS PTO USE ONLY</b>	
Surcharge of <b>\$130.00</b> for furnishing the oath or declaration later than 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				<b>\$ -</b>	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	<b>\$ 1,110.00</b>	
Total claims	11 - 20 =	0	x <b>\$ 18.00</b>	<b>\$ 0</b>	
Independent claims	1 - 3 =	0	x <b>\$ 88.00</b>	<b>\$ 0</b>	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)				<b>+ \$300.00</b>	
<b>TOTAL OF ABOVE CALCULATIONS =</b>				<b>\$ 1,110.00</b>	
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				<b>\$ 555.00</b>	
<b>SUBTOTAL =</b>				<b>\$ 555.00</b>	
Processing fee of <b>\$130.00</b> for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				<b>\$ -</b>	
<b>TOTAL NATIONAL FEE =</b>				<b>\$ 555.00</b>	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). <b>\$40.00</b> per property +				<b>\$ 40.00</b>	
<b>TOTAL FEES ENCLOSED =</b>				<b>\$ 595.00</b>	
				Amount to be refunded:	<b>\$</b>
				charged:	<b>\$</b>

a. ☒ A check in the amount of \$ 555.00 & 40.00 to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. \_\_\_\_\_ in the amount of \$ \_\_\_\_\_ to cover the above fees.  
 A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any  
 overpayment to Deposit Account No. 14-0930. A duplicate copy of this sheet is enclosed.


d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card  
 information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

**NOTE:** Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137 (a)  
 or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Nields & Lemack  
 176 E. Main Street  
 Suite 7  
 Westboro, MA 01581

  
 SIGNATURE  
 Kevin S. Lemack  
 NAME  
 32,579  
 REGISTRATION NUMBER

DT05 Rec'd PCT/PTO 05 OCT 2004  
Attorney Docket No. 644P002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Hee Young Kim, Yong Ki Park, Kyung Koo Yoon and  
Hyung Sup Lim**

For: **METHOD FOR CONTINUOUS PREPARATION OF NANOMETER-SIZED  
HYDROUS ZIRCONIA SOL USING MICROWAVE**

**Mail Stop: PCT**

Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:


LETTER

The above-identified applicants enclose for filing the national phase of a PCT patent application (PCT/KR03/01252) entitled "METHOD FOR CONTINUOUS PREPARATION OF NANOMETER-SIZED HYDROUS ZIRCONIA SOL USING MICROWAVE". Said attached PCT patent application includes (1) Transmittal Letter to the United States Designated/Elected Office (DO/EO/US) Concerning a Filing Under 35 U.S.C. 371 (2-Pages); (2) Translation of the International Application into English: 6-Page Request, 52-Page Specification (including 4-Pages of Claims (11) and 1-Page Abstract) and 11-sheets of A4 size formal drawings; (3) Executed Declaration (3-Pages) and Powers of Attorney (4-Pages); (4) Preliminary Amendment (6-Pages); (5) Check in the amount of \$555.00 in payment of the Filing Fee; (6) Copy of the International Search Report (3-pages); (7) Recordation Form Cover Sheet (1-Page), Assignment (2-Pages); (8) Check in the amount of \$40.00 in payment of the Recording Fee; and (9) Copy of the Notification Concerning Submission of Priority Document (Form PCT/IB/304)(1-Page).

All correspondence concerning this application should be mailed to: **CUSTOMER NO: 42754**

**Kevin S. Lemack  
Nields & Lemack  
176 E. Main Street - Suite 7  
Westboro, Massachusetts 01581**

Respectfully submitted,

  
Kevin S. Lemack  
Attorney for Applicant  
Registration No. 32,579

Date: October 5, 2004

**EXPRESS MAIL NO: ER 908004192 US**

10/510265

DT05 Rec'd PCT/PTO 05 OCT 2004

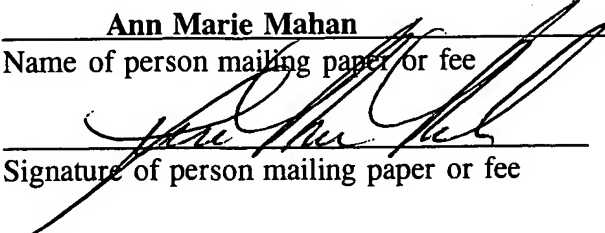
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Hee Young Kim et al.  
Serial No. : Not yet assigned (PCT/KR03/01252)  
Filed : Herewith By Express Mail (26 June 2003)  
For : METHOD FOR CONTINUOUS PREPARATION OF  
NANOMETER-SIZED HYDROUS ZIRCONIA SOL USING  
MICROWAVE  
Examiner : Not yet assigned  
Art Unit : Not yet assigned  
Attorney  
Docket No. : 644P002  
Type of paper : Executed Declaration and Powers of Attorney

"EXPRESS MAIL" MAILING LABEL NO ER 908004192 US  
DATE OF DEPOSIT: October 5, 2004

I hereby certify that this patent application is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" Service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Mail Stop: PCT, Alexandria, VA 22313-1450.

Ann Marie Mahan  
Name of person mailing paper or fee

  
Signature of person mailing paper or fee

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

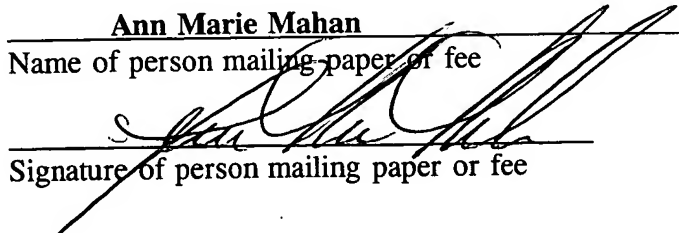
Applicants : Hee Young Kim et al.  
Serial No. : Not yet assigned (PCT/KR03/01252)  
Filed : Herewith By Express Mail (26 June 2003)  
For : METHOD FOR CONTINUOUS PREPARATION OF  
NANOMETER-SIZED HYDROUS ZIRCONIA SOL USING  
MICROWAVE  
Examiner : Not yet assigned  
Art Unit : Not yet assigned  
Attorney  
Docket No. : 644P002  
Type of paper : Preliminary Amendment

"EXPRESS MAIL" MAILING LABEL NO ER 908004192 US  
DATE OF DEPOSIT: October 5, 2004

I hereby certify that this patent application is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" Service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Mail Stop: PCT, Alexandria, VA 22313-1450.

Ann Marie Mahan

Name of person mailing paper or fee

  
Signature of person mailing paper or fee

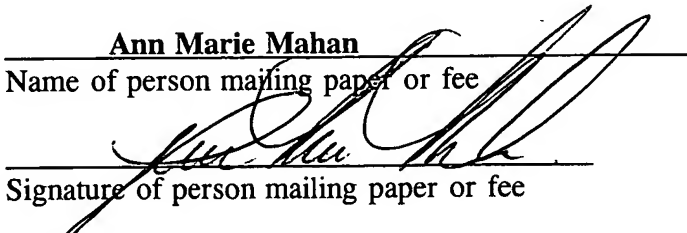
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Hee Young Kim et al.  
Serial No. : Not yet assigned (PCT/KR03/01252)  
Filed : Herewith By Express Mail (26 June 2003)  
For : METHOD FOR CONTINUOUS PREPARATION OF  
NANOMETER-SIZED HYDROUS ZIRCONIA SOL USING  
MICROWAVE  
Examiner : Not yet assigned  
Art Unit : Not yet assigned  
Attorney  
Docket No. : 644P002  
Type of paper : Letter

"EXPRESS MAIL" MAILING LABEL NO ER 908004192 US  
DATE OF DEPOSIT: October 5, 2004

I hereby certify that this patent application is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" Service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Mail Stop: PCT, Alexandria, VA 22313-1450.

Ann Marie Mahan  
Name of person mailing paper or fee

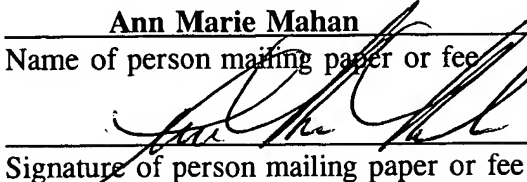
  
Signature of person mailing paper or fee

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Hee Young Kim et al.  
Serial No. : Not yet assigned (PCT/KR03/01252)  
Filed : Herewith By Express Mail (26 June 2003)  
For : METHOD FOR CONTINUOUS PREPARATION OF  
NANOMETER-SIZED HYDROUS ZIRCONIA SOL USING  
MICROWAVE  
Examiner : Not yet assigned  
Art Unit : Not yet assigned  
Attorney  
Docket No. : 644P002  
Type of paper : Translation of the International Application into English

"EXPRESS MAIL" MAILING LABEL NO ER 908004192 US  
DATE OF DEPOSIT: October 5, 2004

I hereby certify that this patent application is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" Service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Mail Stop: PCT, Alexandria, VA 22313-1450.

Ann Marie Mahan  
Name of person mailing paper or fee  
  
Signature of person mailing paper or fee

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

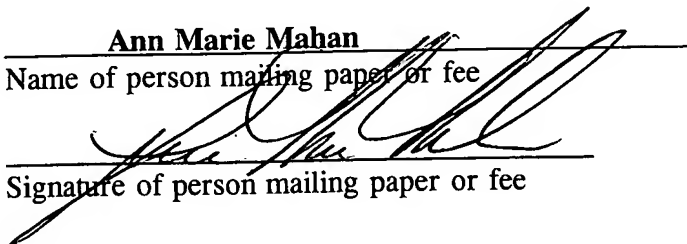
Applicants : Hee Young Kim et al.  
Serial No. : Not yet assigned (PCT/KR03/01252)  
Filed : Herewith By Express Mail (26 June 2003)  
For : METHOD FOR CONTINUOUS PREPARATION OF  
NANOMETER-SIZED HYDROUS ZIRCONIA SOL USING  
MICROWAVE  
Examiner : Not yet assigned  
Art Unit : Not yet assigned  
Attorney  
Docket No. : 644P002  
Type of paper : Copy of the International Search Report

**"EXPRESS MAIL" MAILING LABEL NO ER 908004192 US**  
**DATE OF DEPOSIT: October 5, 2004**

I hereby certify that this patent application is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" Service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Mail Stop: PCT, Alexandria, VA 22313-1450.

Ann Marie Mahan

Name of person mailing paper or fee

  
Signature of person mailing paper or fee



DT05 Rec'd PCT/PTO 05 OCT 2004

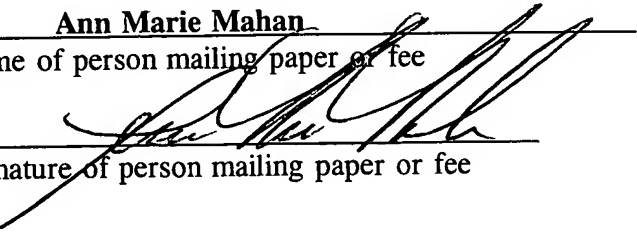
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Hee Young Kim et al.  
Serial No. : Not yet assigned (PCT/KR03/01252)  
Filed : Herewith By Express Mail (26 June 2003)  
For : METHOD FOR CONTINUOUS PREPARATION OF  
NANOMETER-SIZED HYDROUS ZIRCONIA SOL USING  
MICROWAVE  
Examiner : Not yet assigned  
Art Unit : Not yet assigned  
Attorney  
Docket No. : 644P002  
Type of paper : Filing Fee

"EXPRESS MAIL" MAILING LABEL NO ER 908004192 US  
DATE OF DEPOSIT: October 5, 2004

I hereby certify that this patent application is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" Service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Mail Stop: PCT, Alexandria, VA 22313-1450.

Ann Marie Mahan  
Name of person mailing paper or fee

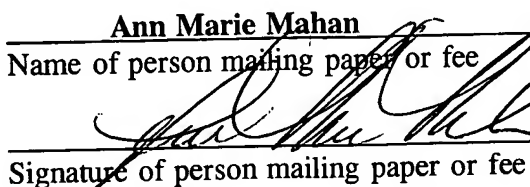
  
Signature of person mailing paper or fee

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Hee Young Kim et al.  
Serial No. : Not yet assigned (PCT/KR03/01252)  
Filed : Herewith By Express Mail (26 June 2003)  
For : METHOD FOR CONTINUOUS PREPARATION OF  
NANOMETER-SIZED HYDROUS ZIRCONIA SOL USING  
MICROWAVE  
Examiner : Not yet assigned  
Art Unit : Not yet assigned  
Attorney  
Docket No. : 644P002  
Type of paper : Transmittal Letter To The United States Designated/Elected Office  
(DO/EO/US) Concerning A Filing Under 35 U.S.C. 371

"EXPRESS MAIL" MAILING LABEL NO ER 908004192 US  
DATE OF DEPOSIT: October 5, 2004

I hereby certify that this patent application is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" Service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Mail Stop: PCT, Alexandria, VA 22313-1450.

Ann Marie Mahan  
Name of person mailing paper or fee  
  
Signature of person mailing paper or fee

10/510265

DT05 Rec'd PCT/PTO 05 OCT 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Hee Young Kim et al.  
Serial No. : Not yet assigned (PCT/KR03/01252)  
Filed : Herewith By Express Mail (26 June 2003)  
For : METHOD FOR CONTINUOUS PREPARATION OF  
NANOMETER-SIZED HYDROUS ZIRCONIA SOL USING  
MICROWAVE  
Examiner : Not yet assigned  
Art Unit : Not yet assigned  
Attorney  
Docket No. : 644P002  
Type of paper : Assignment

"EXPRESS MAIL" MAILING LABEL NO ER 908004192 US  
DATE OF DEPOSIT: October 5, 2004

I hereby certify that this patent application is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" Service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Mail Stop: PCT, Alexandria, VA 22313-1450.

Ann Marie Mahan

Name of person mailing paper or fee

  
Signature of person mailing paper or fee

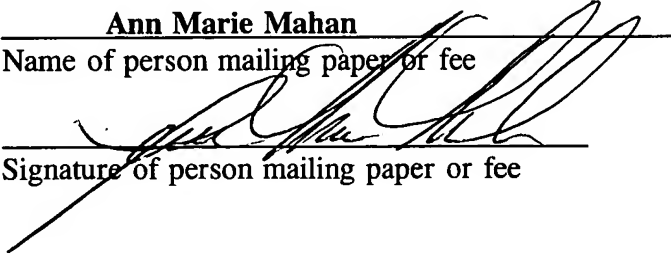
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Hee Young Kim et al.  
Serial No. : Not yet assigned (PCT/KR03/01252)  
Filed : Herewith By Express Mail (26 June 2003)  
For : METHOD FOR CONTINUOUS PREPARATION OF  
NANOMETER-SIZED HYDROUS ZIRCONIA SOL USING  
MICROWAVE  
Examiner : Not yet assigned  
Art Unit : Not yet assigned  
Attorney  
Docket No. : 644P002  
Type of paper : Recording Fee

**"EXPRESS MAIL" MAILING LABEL NO ER 908004192 US**  
**DATE OF DEPOSIT: October 5, 2004**

I hereby certify that this patent application is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" Service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Mail Stop: PCT, Alexandria, VA 22313-1450.

Ann Marie Mahan  
Name of person mailing paper or fee

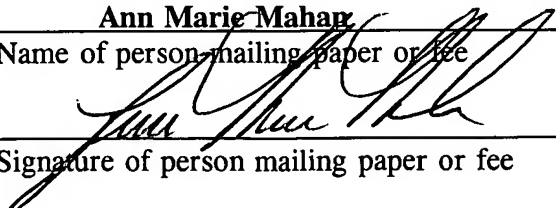
  
Signature of person mailing paper or fee

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Hee Young Kim et al.  
Serial No. : Not yet assigned (PCT/KR03/01252)  
Filed : Herewith By Express Mail (26 June 2003)  
For : METHOD FOR CONTINUOUS PREPARATION OF  
NANOMETER-SIZED HYDROUS ZIRCONIA SOL USING  
MICROWAVE  
Examiner : Not yet assigned  
Art Unit : Not yet assigned  
Attorney  
Docket No. : 644P002  
Type of paper : Copy of the Notification Concerning Submission or Transmittal of  
Priority Document (Form PCT/IB/304)

"EXPRESS MAIL" MAILING LABEL NO ER 908004192 US  
DATE OF DEPOSIT: October 5, 2004

I hereby certify that this patent application is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" Service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Mail Stop: PCT, Alexandria, VA 22313-1450.

Ann Marie Mahan  
Name of person mailing paper or fee  
  
Signature of person mailing paper or fee